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IS 6702 (1991): Morse Taper Reduction Sleeves [PGD 32: Cutting tools]



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मोर्स टेपर वाले पूनीकरण स्लीव — विशिष्ट

(पहला पुनरीक्षण)

Indian Standard

MORSE TAPER REDUCTION SLEEVES —
SPECIFICATION

(*First Revision*)

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Drills and Reamers Sectional Committee had been approved by Production Engineering Division Council.

This standard was first published in 1972 superseding IS 2608 : 1964 'Reduction sleeves and extension sockets for morse tapers' which was revised and split into two separate standards as morse taper extension socket and morse taper reduction sleeves. This standard gives only the requirements in morse taper reduction sleeves and also gives dimensions and tolerance.

Subsequently upon changing technology in Indian industries, this standard has been taken up for revision.

The following are the main modifications made in this revision:

- a) Scope has been reworded indicating that this standard applies to the tanged end morse taper reduction sleeves.
- b) Following changes have been made in figure:
 - i) The shape of the tang end made as per ISO 238 : 1974.
 - ii) The surface grade numbers indicated in place of triangles.
- c) Dimensions of cotter slots with taper keys have been deleted (separate Indian Standard identical to ISO 1080 : 1975 'Machine tools — Morse taper shanks — Cotter slots with taper keys' is under preparation. Till this standard is published, reference shall be made to ISO 1080 : 1975 for cotter slot dimensions).

In the formulation of this Indian Standard assistance has been derived from the following publication:

ISO 238 : 1974 'Reduction sleeve and extensions socket for tools with morse taper shank' issued by the International Organization for Standardization (ISO).

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off the numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

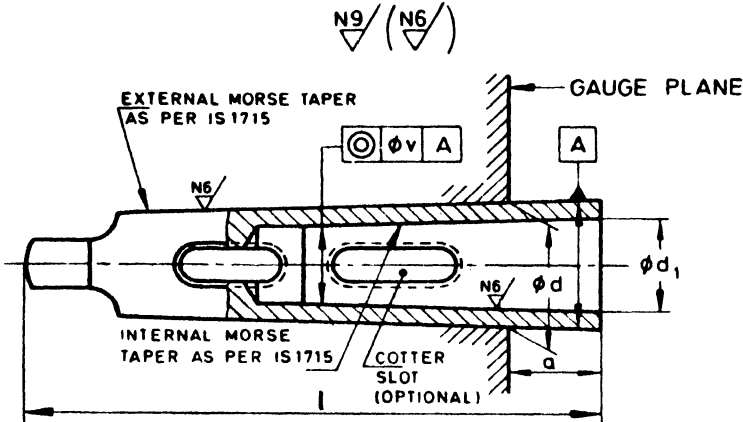
AMENDMENT NO. 1 AUGUST 1993
TO
IS 6702 : 1991 MORSE TAPER REDUCTION SLEEVES —
SPECIFICATION

(First Revision)

(Page 2, Table 1) — Substitute the following for the existing table:

Table 1 Dimensions for Morse Taper Reduction Sleeves
(Clause 4)

All dimensions in millimetres.



External Taper				Internal Taper		<i>v</i> , Max	
Morse Taper No.	<i>d</i>	<i>l</i>	<i>a</i>	Morse Taper No.	<i>d</i> ₁	Grade 1	Grade 2
2	17·780	92	17	1	12·065	0·008	0·015
3	23·825	99	5	1	12·065	0·008	0·015
		112	18	2	17·780		
4	31·267	124	6·5	(1)	12·065	0·008	0·015
				2	17·780		
		140	22·5	3	23·825		
5	44·399	156	6·5	(1)	12·065	0·010	0·020
				(2)	17·780		
				3	23·825		
		171	21·5	4	31·267		
6	63·348	218	8	(1)	12·065	0·010	0·020
				(2)	17·780		
				3	23·825		
				4	31·267		
				5	44·399		

NOTE — The reduction sleeves with internal tapers given within brackets are non-preferred.

AMENDMENT NO. 2 APRIL 1994
TO
IS 6702 : 1991 MORSE TAPER REDUCTION
SLEEVES — SPECIFICATION

(*First Revision*)

(*Page 1, clause 2*) — Substitute the following:

‘IS 13776 : 1993/
ISO 1080 : 1975

Machine tools — Morse taper shanks —
Cotter slots with taper keys’

in place of

—

Morse taper shanks cotter slots with taper
keys (*under preparation*)’

(*Page 1, clause 7.3*) — Substitute the following for the existing matter:

‘7.3 Unless otherwise specified, the morse taper extension sockets shall be supplied without cotter slots. If required with cotter slots, the dimensions shall be according to IS 13776 : 1993.’

Indian Standard

MORSE TAPER REDUCTION SLEEVES — SPECIFICATION

(First Revision)

1 SCOPE

This standard covers the dimensions and requirements for morse taper reduction sleeves suitable for tools with tapered end morse taper shanks.

2 REFERENCES

The Indian Standards listed below are necessary adjuncts to this standard:

IS No.	Title
1715 : 1986	Dimensions for self-holding tapers (<i>second revision</i>)
2102 (Part 1) : 1980	General tolerances for linear and angular dimensions (<i>second revision</i>)
—	Morse taper shanks, cotter slots with taper key (<i>under preparation</i>)

3 GRADES

- Grade 1 — For machine tool industry.
- Grade 2 — For general engineering industry.

4 DIMENSIONS

Dimensions shall be as given in Table 1 read with figure.

5 MATERIAL

Case hardening steel of tensile strength not less than 600 MPa in the core after case hardening.

6 HARDNESS

Tapered portions case-hardened to 590 HV to 670 HV.

7 GENERAL REQUIREMENTS

7.1 Dimensions for morse tapers according to

IS 1715 : 1986 (except for dimensions 'l' and 'a' which are greater for certain tools).

7.2 Tolerances on dimensions without any specified tolerances shall be of grade 'medium' according to IS 2102 (Part 1) : 1980.

7.3 Unless otherwise specified, the morse taper extension sockets shall be supplied without cotter slots. In case required with cotter slot, the dimensions shall be according to 'Indian Standard Morse taper shanks, cotter slots with taper keys' (*under preparation*).

NOTE — Till such time, the standard under preparation is published, the matter shall be as agreed to between the supplier and the purchaser.

8 DESIGNATION

A morse taper reduction sleeve of Grade 2 having external morse taper 4 and internal morse taper 3 shall be designated as:

Morse Taper Reduction Sleeve IS 6702 Grade 2 Morse 4 × 3.

9 WORKMANSHIP AND FINISH

The morse taper reduction sleeves shall be manufactured in one piece and shall be free from cracks, burrs and other manufacturing defects.

10 MARKING

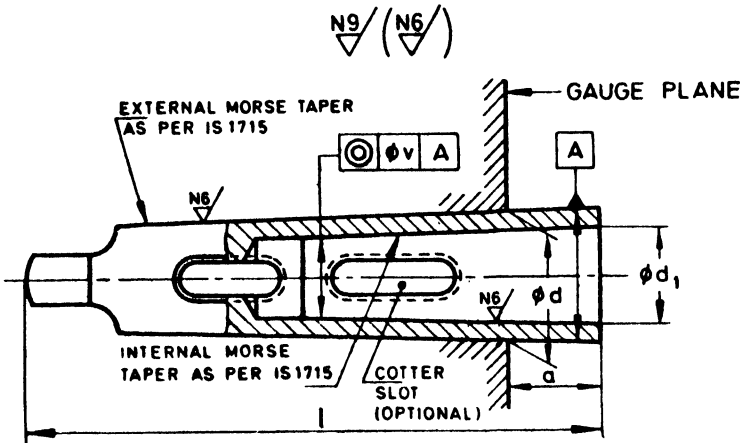
Each morse taper reduction sleeve shall be marked with the grade, designating size and indicating the source of manufacture.

11 PRESERVATIVE COATING AND PACKING

Each morse taper reduction sleeve shall be covered with a suitable rust-proofing material and wrapped in moisture proof paper. It shall then be packed according to the best trade practice.

Table 1 Dimensions for Morse Taper Reduction Sleeves
(Clause 4)

All dimensions in millimetres.



External Taper				Internal Taper		V, Max	
Morse Taper No.	d	l	a	Morse Taper No.	d_1	Grade 1	Grade 2
2	17.730	92	17	1	12.065	0.008	0.015
3	23.825	99	5	1	12.065	0.008	0.015
		112	18	2	17.720		
4	31.257	124	6.5	(1)	12.065	0.008	0.015
				2	17.720		
		140	22.5	3	23.225		
5	44.399	156	6.5	(1)	12.065	0.010	0.020
				(2)	17.720		
				3	23.825		
		171	21.5	4	31.257		
5	63.348	218	8	(1)	12.065	0.010	0.020
				(2)	17.780		
				3	23.225		
				4	31.257		
				5	44.333		

NOTE — The reduction sleeves with Internal tapers given within brackets are non-preferred.

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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